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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/989,898	11/19/2001	Laurence M.C. Lai	11157.00	1341
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WOMBLE CARLYLE SANDRIDGE & RICE, PLLC ATTN: PATENT DOCKETING 32ND FLOOR P.O. BOX 7037 ATLANTA, GA 30357-0037				
			EXAMINER	
			ALANKO, ANITA KAREN	
			ART UNIT	PAPER NUMBER
			1765	

DATE MAILED: 05/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/989,898

Applicant(s)

LAI ET AL.

Examiner

Anita K. Alanko

Art Unit

1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on RCE & IDS 3/9/06.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/9/06</u> | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 3/9/06, an IDS, has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adachi (US 5,003,610) in view of Appalucci et al (EP 794 520 A1) and Lichtblau (US 3,913,219).

Appalucci teaches a method for demetallizing a web 104 (Fig.7) to make a singular functional feature of a product unit (a security tag, Fig.5), the singular functional feature having a desired feature thickness and composed of structures 26, 30 formed on each side of the web 16, 18, the method comprising:

applying a first etch-resistant pattern (etch resistant ink, col.6, lines 14-17) to a first metal-containing layer of the web (col.6, lines 17-23), wherein at least a portion of the first

pattern substantially defines a first part of the functional feature of the product unit (pattern 22 to form a resonant circuit 12, col.6, lines 31-33);

applying a second etch-resistant pattern (etch resistant ink, col.6, lines 14-17) to a first metal-containing layer of the web (col.6, lines 17-23), wherein at least a portion of the second pattern substantially defines a second part of the functional feature of the product unit (pattern 24 to form a resonant circuit 12, col.6, lines 31-33).

Appalucci fails to disclose the specifics of the etching process, but rather incorporates by reference Lichtblau.

Lichtblau teaches a method for demetallizing a web comprising:

exposing both sides of the web 44 to a liquid etchant (by passing the web 98 through a continuous spray etching apparatus 100) to effect removal of metal-containing material from areas of the web not protected by the first and second etch-resistant patterns; and

washing the etchant from the web (with water rinse apparatus 112).

It would have been obvious to one with ordinary skill in the art to wet etch and then wash the etchant from the web in the method of Appalucci because Lichtblau teaches that this is a useful technique for patterning metal layers on webs.

Appalucci also fails to explicitly disclose the thicknesses of the first and second metal layers, and thus fails to disclose that the first metal-containing layer is about one-half of the desired feature thickness and that the second metal-containing layer is about one-half of the desired feature thickness.

Adachi teaches that metal thicknesses on opposite sides of a substrate are about equal (as shown in the figures; col.4, lines 21-25 “mirror symmetry”). Adachi teaches that selective

etching may be used to form the patterns, but fails to disclose the specifics of the process.

Adachi is directed to a structure similar in nature to Appalucci. It would have been obvious to one with ordinary skill in the art to form the metal layers by patterning, wet etching and rinsing as taught by modified Appalucci in the method of Adachi because modified Appalucci is a useful method for patterning metal layers on webs or substrates.

Alternatively, it would have been obvious to form the metal layers to about one-half of the desired feature thickness in the modified method of Appalucci because Adachi teaches that it is useful to form devices with layers that are of about the same thickness on opposite sides of a substrate.

Claims 26, 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adachi in view of Appalucci et al (EP 794 520 A1) and Lichtblau (3,913,219) as applied to claim 25 and further in view of Graham et al (GB 540542 A).

As to claim 26, Lichtblau discloses to wet etch by spraying, but fails to disclose to immerse in an etch bath.

Graham teaches that sodium hydroxide bath is a useful etchant for aluminum (page 1, lines 55-61).

It would have been obvious to one with ordinary skill in the art to etch the aluminum layers of Appalucci or Adachi with a NaOH bath because Graham teaches that this is a useful technique for patterning aluminum.

Response to Arguments

The allowability of the claims is withdrawn in view of the new references cited in the IDS. Adachi has been previously cited. The claims are rejected over Adachi because, as broadly cited, Adachi has metal layers that are of the same thickness, and thus are each of about one-half of the desired feature thickness. Adachi fails to teach the specifics of the etch process, however this is obvious as taught by Appalucci and Lichtblau.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anita K. Alanko whose telephone number is 571-272-1458. The examiner can normally be reached on Mon-Fri until 2:30 pm (Wed until 11:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571-272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Anita K. Alanko
Anita K Alanko
Primary Examiner
Art Unit 1765